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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,032	07/27/2005	Alfred Hofrichter	264743US0PCT	8796
22850 7590 03/06/2008 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER SMITH, FRANCIS P				
ART UNIT		PAPER NUMBER		
4151				
NOTIFICATION DATE		DELIVERY MODE		
03/06/2008		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/523,032

Applicant(s)

HOFRICHTER ET AL.

Examiner

FRANCIS P. SMITH

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CIS-100)
Paper No(s)/Mail Date 4/15/2005

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 3, 4, and 5 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. A claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. In the instant application, "...at least equal to the maximum temperature of use of the coated substrate", "...below the temperature at which the plastic weakens", and "...as close as possible to the temperature at which the plastic weakens" do not further limit the independent claim: "...a temperature at least equal to the maximum temperature of use of the coated substrate minus 20°C." Dependent claims 3, 4, and 5 do not specify a further limitation of claim 1, but claim temperatures more broad than "the maximum temperature of use of the coated substrate minus 20°C."

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-10 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claims 1 and 3, a process for the formation of a coating is suggested in the preamble; however the actual step of coating is not expressly recited in the claim. Furthermore, "the maximum temperature of use" in line 3 of claims 1 and 3 is indefinite. This does not convey a temperature of use for the coated substrate. Paragraph [0005] lists a variety of uses with temperatures ranging from -70-100°C. In the instant application, the maximum temperature of use was interpreted for examination purposes as the temperature below the thermal damage threshold, at least 20°C below the glass transition temperature.

Addressing claim 5 regarding the temperature at which the plastic weakens, "...as close as possible..." in lines 2-3 of claim 5 is indefinite. As close as possible does not clearly indicate the temperature at which the plastic weakens. Paragraph [0029] states that the substrate temperature reached during deposition ranges from 124-1250°C. In the instant application, the temperature as close as possible to the temperature at which the plastic weakens was interpreted for examination purposes as the temperature below the thermal damage threshold, at least 20°C below the glass transition temperature.

Claims 2, 4, 6-10, and 12 are rejected for inheriting the deficiencies of the claims from which they depend.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-7, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (EP 0887437).

For claims 1-5, Yang teaches a method for depositing a protective coating on a substrate by high rate arc plasma deposition (i.e. plasma CVD as per claim 2). Specifically, the method entails forming an abrasion-resistant coating onto a plastic substrate by plasma deposition (pg. 2, lines 24-29, 56-58; pg. 3, line 1). The process is conducted at temperatures below the thermal damage threshold, at a temperature at least 20°C below the glass transition temperature (pg. 2, lines 24-29, 56-58; pg. 3, line 1). Yang remains silent about a temperature of use of the coated substrate. However, one skilled in the art would have found obvious to use the substrate at the temperatures being below the glass transition temperatures since exceeding the glass transition temperatures of the plastic substrate during its use will result in deformation of the substrate/coated substrate.

Regarding claim 6, Yang discloses utilizing a water-cooled cascaded arc (i.e. the process employs cooling means) (pg. 5, line 53).

For claim 7, Yang teaches exposing the substrate to a first gas for a first time period, then exposing the substrate to a second gas for a second time period (i.e. forming a coat in several stages) (pg. 6, lines 36-38).

As per claim 9, Yang discloses heating the substrate to 400°C (i.e. at least 120°C) (pg. 6, lines 20-25).

Addressing claim 10, Yang teaches forming a 3µm abrasion-resistant layer on a

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polycarbonate substrate (pg. 4, lines 25-26, 51-53).

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (EP 0887437) in view of Hunt et al. (WO 01/02622A2).

For claim 8, Yang teaches a method for depositing a protective coating by high rate arc plasma deposition. The process is conducted at temperatures below the thermal damage threshold, at a temperature at least 20°C below the glass transition temperature (i.e. stabilizing the substrate to be coated at a temperature at least equal to the maximum temperature of use of the coated substrate minus 20°C) (pg. 2, lines 56-58; pg. 3, line 1). Yang does not teach forming the coating while ensuring that the temperature does not exceed the temperature at which the plastic weakens, or the repetition of steps.

Hunt discloses methods for producing coatings on a glass substrate (i.e. any material that can crack, break, or otherwise be damaged). Hunt notes that temperature differentials will create internal stress and ultimately break or shatter the substrate. These differentials may be alleviated by allowing the substrate to recover between subsequent coatings (i.e. taking care that the temperature of the substrate does not reach the temperature at which the plastic weakens). This temperature control allows for multiple exposures to the flame (i.e. carrying out operations a and b) (pg. 12, lines 11-28). Furthermore, Hunt discloses the use of a flame arrangement where the coating flames are arranged in a line. This allows the substrate to recover between flames, stabilizing the substrate, yet providing multiple coatings (e.g. a repetition of steps) of the same or different material to a desired thickness (pg. 13,

lines 9-30). Therefore, it would have been obvious to one skilled in the art at the time of the invention to incorporate Hunt's temperature controlled, coat-forming flame line in Yang's method in order to successfully coat a plastic substrate while minimizing internal stress.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (EP 0887437) in view of Reed et al. (WO 89/01957).

Yang does not teach a vehicle body part, a vent, or a window comprising said product.

Reed teaches abrasion resistant articles. Specifically, Reed discloses that polycarbonates, used for their excellent breakage resistance, are treated for abrasion resistance for use in automobile headlamps, stoplight lenses, and safety shields in windows. Therefore, it would have been obvious to one skilled in the art at the time of the invention to adapt Yang's method by applying a protective coating to Reed's automobile headlights in order to improve the longevity of said items by protecting against abrasion and UV degradation.

In the instant application, the X reference provided by the International Search Report was applied as 103 prior art because it did not explicitly state a plastic substrate or a temperature at least equal to the maximum temperature of use of the coated substrate minus 20°C.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to FRANCIS P. SMITH whose telephone number is (571)270-3717. The examiner can normally be reached on Monday through Friday 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mikhail Kornakov can be reached on (571)272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FPS

/Michael Kornakov/

Supervisory Patent Examiner, Art Unit 4151